

Type F3.00/F3.01 Flow Sensors

The Type F3.00/F3.01 Paddle Wheel Flow Sensors are the core items in the Digiflow® FlowX3 line. A square wave output signal is generated with frequency proportional to rate of rotor rotation and flow velocity. This pulse output is normally fed to a FlowX3 flow monitor/transmitter, blind transmitter, batch controller or adjustable flow switch. For simple flow indication the output can be fed directly to a computer.

Two types of sensors are available, Hall Effect which requires a 5 to 24 VDC power supply and Coil Effect which operates with less power, 3 to 5 VDC. Coil is required with the battery powered flow monitor. Hall Effect signals may be transmitted up to 300 meters (984 ft.) without the need for conditioning whereas Coil Effect signals may be transmitted up to 16 m (52.5 ft.) without conditioning.

Body Materials:	CPVC, PVDF, 316L Stainless Steel, Brass
Rotor:	ECTFE (Halar®)
Shaft & Bearings:	Ceramic
Seals:	EPDM, Viton®
Pipe Sizes:	1/2"– 24" in two sensor lengths, L0 or L1 See Installation Fittings (pages 28–30)
Flow Ranges:	See page 34

■ Features

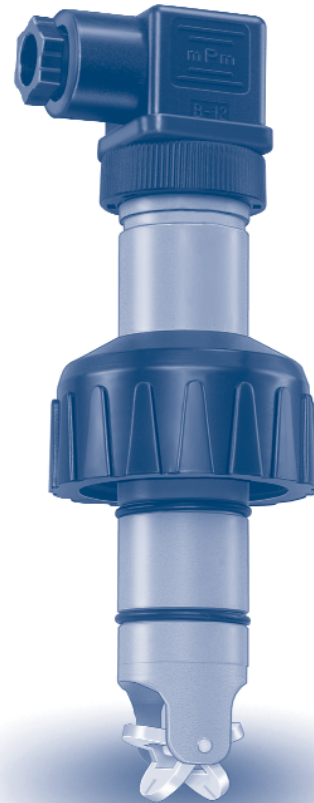
- **Ceramic Shaft and Bearings** – Provide long life on services containing grit
- **Self Cleaning Design** – Lower maintenance
- **Submersible Sensors Available** – NEMA 6, 6P (IP68) models are available for outdoor or submersible installation

■ Connectable FlowX3 Instruments

Sensor Type	Sensor No.	Instrument Mounting	FlowX3 Instruments*
Hall	F3.01.H F3.00.H	Direct Panel or Wall	F9.00, F9.01, F9.02, F9.50
Coil	F3.01.C F3.00.C	Direct Panel or Wall	F9.20

* Power supply is normally fed from FlowX3 instruments.

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FLOWX3



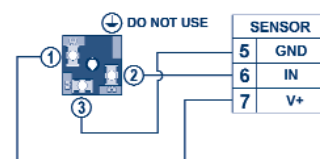
■ Wiring

Sensor Connections to Instruments

NEMA 4, 4X (IP 65)
Sensor

FlowX3
Instruments

Other Brand
Instruments



NEMA 6, 6P (IP 68)
Sensor

FlowX3
Instruments

Other Brand
Instruments



* 10 kOhm pull-up resistor may be required when Hall sensors are connected to other brand instruments.

Type F3.00/F3.01 Flow Sensors

■ Technical – General

Output Signal:	Square wave (pulse)
Output Frequency:	45 Hz per m/s nominal (13.7 Hz per ft./sec.)
Electrical Class:	NEMA 6, 6P (IP68) – F3.01 and F3.00 NEMA 4, 4X (IP65) – F3.00 only
Accuracy:	< ± 1% of reading value after field calibration or ± 0.75% of full scale
Repeatability:	± 0.5% of full scale
Velocity Range:	0.15 to 8 m/s (0.5 to 25 ft./sec.). See page 34 for corresponding flow ranges.
Viscosity Range:	0.5 to 20 centistokes. Field calibration is required if outside this range, up to 40 centistokes maximum.
Maximum % Solids:	10% with particle size not exceeding 0.5 mm cross section or length
Max. Operating Pressure/Temperature:	See chart on page 35
Cable (where supplied):	22 AWG, 3 conductors

■ Technical – F3.00.H and F3.01.H Hall Sensors

Supply Voltage*:	5 to 24 VDC regulated
Supply Current:	< 30 mA @ 24 VDC
Current Consumption:	12 to 30 mA
Output Type:	Transistor NPN open collector
Output Current:	10mA max
Max. Cable Length:	Max. 300 m (984 ft.) recommended without signal conditioning

■ Technical – F3.00.C and F3.01.C Coil Sensor

Power Supply:	Normally 2 x 3.6 V lithium batteries located in the F9.20 flow monitor or 3 to 5 VDC regulated
Supply Current:	< 10 aA
Min. Input Impedance:	100 k K
Max. Cable Length:	Max. 16 m (52.5 ft.) recommended without signal conditioning

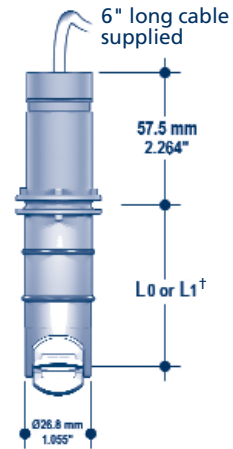
* Supply voltage is normally fed from FlowX3 instruments.

■ Installation

- See page 33 for guidelines on installation in piping systems.
- See pages 28 to 30 for installation fittings.

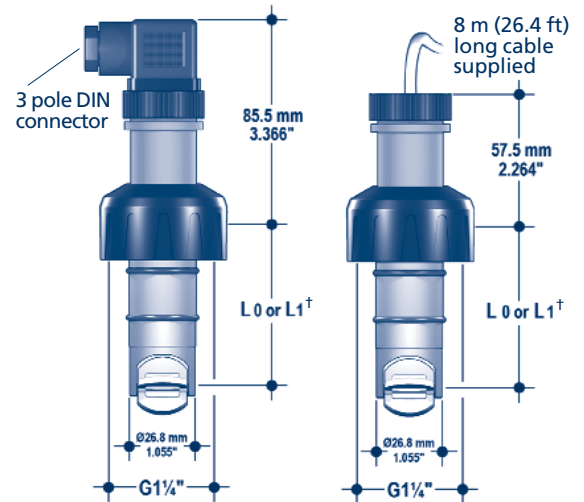
Digiflow®
FLOW X3

F3.01 For Direct Connection to Instruments



NEMA 6, 6P (IP68)

F3.00 For Remote Connection to Instruments



NEMA 4, 4X (IP65)

NEMA 6, 6P (IP68)

L0 = 68.3 mm (2.69")
L1 = 98.5 mm (3.88")

† Required sensor length (L0 or L1) depends on choice of installation fittings. See pages 28 to 30.